REMARKS

Applicants have amended Claims 1, 3 and 5 and have added new Claims 6-17, which include independent Claims 6, 16, and 17 and dependent Claims 7-13. The Examiner's comments and rejections are addressed below in the order in which they were presented.

The 35 U.S.C. § 112 Rejections

The Examiner has rejected Claims 1, 3 and 5 under 35 U.S.C. § 112, second paragraph, as being indefinite. Applicants have amended Claims 1, 3 and 5 as suggested by the Examiner to recite "coating" instead of "adsorbing" with reference to the coating of the sorbent onto the sorbent structure. Therefore, Applicants respectfully request withdrawal of this rejection.

The 35 U.S.C. § 102 Rejections

The Examiner has rejected Claims 1, 2, 4 and 5 under 35 U.S.C. § 102(b) as being anticipated by Chang (U.S. Patent No. 5,505,766). Applicant respectfully traverses this rejection.

Chang teaches supplying a sorbent material to a baghouse having a filter bag to coat the filter bag with sorbent. To coat the filter bag with the sorbent, a gas containing the sorbent passes *through* the filter bag and the sorbent is collected on the filter cloth. In fact, it is the force of the gas passing through the filter cloth of the filter bag that forces the sorbent to remain on the filter bag. Flue gas containing a contaminant is then passed through the filter bag to allow for contact between the contaminant and the sorbent in the filter bag material. More specifically, the gas passes through a layer of sorbent having a given thickness that has built-up on the filter bag and then through the filter cloth itself. Since the gas passes through this layer of sorbent on the filter bag, by increasing the thickness of this layer the gas can be exposed to more sorbent. On disadvantage of increasing the thickness of the sorbent layer, however, is a corresponding increase in the pressure drop across the filter bag.

The present invention of independent Claim 1, however, recites passing a contaminated gas over a sorbent structure. Similarly, independent Claim 5 recites means for passing a contaminated gas over a sorbent structure. In both Claims, the gas passes over the sorbent structure and not through it as taught by Chang. As such, the mechanism for

contacting the gas with the sorbent structure is completely different from the method taught by Chang. More specifically, in the present invention, in passing over the sorbent structure having the sorbent thereon, the gas is exposed to the top layer of sorbent only. In other words, the gas does not pass through a layer of sorbent having a given thickness as taught by Chang. Accordingly, the pressure drop across the sorbent structure is relatively lower in the present invention compared to the mechanism of Chang where the gas passes through a layer of sorbent. Therefore, Chang does not teach each and every element of independent Claims 1 and 5 and claims dependent therefrom, and withdrawal of this rejection is respectfully requested.

With respect to new independent Claim 6, the sorbent structure is recited as being non-porous. *See* Specification page 4, lines 2-3. Chang teaches the use of a filter bag, which is clearly a porous medium. Therefore, Chang does not teach a non-porous sorbent structure as recited in this Claim. Therefore, Applicants believe that independent Claim 6, and claims dependent therefrom are in condition for allowance.

Moreover, dependent Claims 7-9 and 13 recite the use of an attractive force to coat and recoat, respectively, the sorbent structure with sorbent. Chang does not teach the use of such an attractive force in coating the filter bag with sorbent. As noted above, the sorbent remains on the filter bag in Chang as a result of the gas passing through the filter bag itself, not as the result of any type of attractive force.

Independent Claim 14 recites coating a sorbent structure comprising magnetically attracting the sorbent to the sorbent structure. Again, Chang does not teach the use of such magnetic forces to coat the filter bag or to attach the sorbent to the sorbent structure. Therefore, Applicants believe that Claim 14 is in condition for allowance.

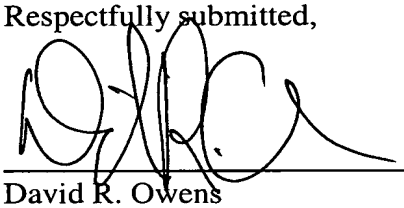
Independent Claim 15 similarly recites a magnetized sorbent structure. Again, Chang does not teach such a magnetized structure, and Applicants believe that Claim 15 is also in condition for allowance.

Conclusion

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. This attached page is captioned "Version With Markings to Show Changes Made."

In view of the above considerations, Applicants respectfully request a timely Notice of Allowance in this application. Applicants believe that no fee is due with this submission. However, if it is determined that a fee is due, please charge the required fee to Pennie & Edmonds LLP Deposit Account No. 16-1150. A copy of this sheet is enclosed.

Respectfully submitted,



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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Claims:

Claims 1, 3 and 5 have been amended as follows:

1. (Amended Once) A method for removing a vapor-phase contaminant from a contaminated gas stream in a duct, said method comprising:

[adsorbing] coating fresh sorbent onto [the] a surface of a sorbent structure positioned inside [said] a gas duct;

passing [said] a contaminated gas stream comprising a vapor-phase contaminant through said gas duct and over said [fresh] surface of said sorbent structure having said fresh sorbent thereon so that said vapor-phase contaminant is adsorbed by said fresh sorbent until saturated sorbent is produced;

periodically removing said saturated sorbent from said sorbent structure and collecting said saturated sorbent outside of said gas duct; and

repeating said [adsorbing step] coating with a new quantity of fresh sorbent.

3. (Amended Once) The method of Claim 1 wherein said [adsorbing] coating is carried out prior to placing said sorbent structure inside said gas duct.

5. (Amended Once) An apparatus for removing a vapor-phase contaminant from a contaminated gas stream in a duct, said apparatus comprising:

at least one sorbent structure;

a means for [adsorbing] coating fresh sorbent onto said sorbent structure;

a means for passing [said] a contaminated gas over said sorbent structure having said fresh sorbent thereon to produce saturated sorbent; and

a means for removing and collecting said saturated sorbent.

Claims 6-17 have been added as follows:

6. (New) A method for removing a vapor-phase contaminant from a gas stream, comprising:

coating a non-porous sorbent structure positioned in a gas duct with a sorbent;

passing a gas stream comprising a vapor-phase contaminant through the gas duct;

contacting the vapor-phase contaminant with the sorbent, thereby adsorbing the vapor-phase contaminant onto the sorbent;

removing the sorbent having the adsorbed vapor-phase contaminant from the gas duct; and

recoating the non-porous sorbent structure with fresh sorbent.

7. (New) The method of Claim 6, wherein the coating comprises attracting the sorbent to the non-porous sorbent structure using an attractive force.

8. (New) The method of Claim 7, wherein the attracting comprises attracting the sorbent to the non-porous sorbent structure using an attractive force selected from the group consisting of electrostatic attraction, magnetic attraction, gravitational attraction, van der Waals attraction, and combinations thereof.

9. (New) The method of Claim 6, wherein the coating comprises magnetically attracting the sorbent to the non-porous sorbent structure.

10. (New) The method of Claim 9, wherein the removing comprises demagnetizing the sorbent and the sorbent structure.

11. (New) The method of Claim 6, wherein the non-porous sorbent structure is selected from the group consisting of tubes, plates, monoliths, walls, vanes and combinations thereof.

12. (New) The method of Claim 6, wherein the vapor-phase contaminant comprises mercury.

13. (New) The method of Claim 6, wherein the recoating comprises attracting the fresh sorbent to the non-porous sorbent structure using an attractive force selected from the

group consisting of electrostatic attraction, magnetic attraction, gravitational attraction, van der Waals attraction, and combinations thereof.

14. (New) The method of Claim 6, wherein the recoating comprises:

removing the non-porous sorbent structure from the gas duct;

applying the fresh sorbent to the non-porous sorbent structure; and

repositioning the non-porous sorbent structure in the gas duct.

15. (New) The method of Claim 6, wherein the recoating comprises recoating the non-porous sorbent structure with the fresh sorbent while the non-porous sorbent structure remains in the gas duct.

16. (New) A method for removing a vapor-phase contaminant from a gas stream, comprising:

coating a sorbent structure positioned in a gas duct with a sorbent, wherein the coating comprises magnetically attracting the sorbent to the sorbent structure;

passing a gas stream comprising a vapor-phase contaminant through the gas duct;

contacting the vapor-phase contaminant with the sorbent, thereby adsorbing the vapor-phase contaminant onto the sorbent;

removing the sorbent having the adsorbed vapor-phase contaminant from the gas duct; and

repeating the coating with fresh sorbent.

17. (New) An apparatus for removing a vapor-phase contaminant from a gas stream, comprising:

a gas duct;

a magnetized sorbent structure positioned in said gas duct; and

a sorbent attached to said magnetized sorbent structure,

wherein said magnetized sorbent structure is configured to be periodically demagnitized, thereby allowing said sorbent to become detached from said magnetized sorbent structure.